



Solucinde

SCREEN PRINTER



GKG



G-Titan
FULLY AUTOMATIC SMT PRINTER

OPC OPTIMUM PASTE CONTROL

GET READY FOR LIGHTS-OUT MANUFACTURING

AUTO PASTE REPLENISHMENT

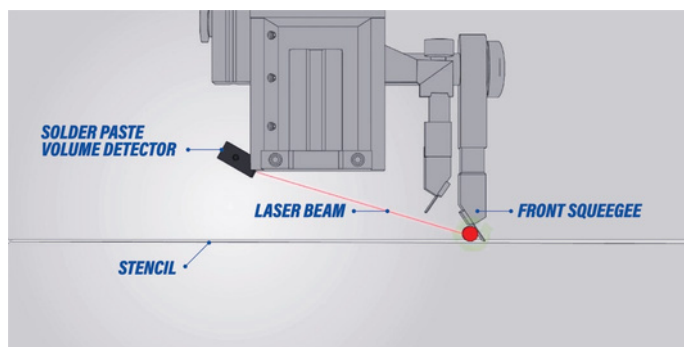
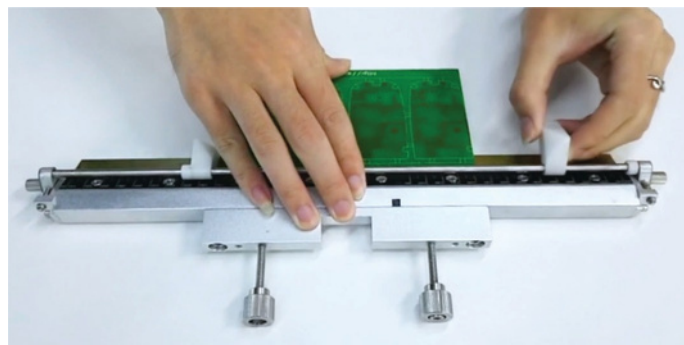
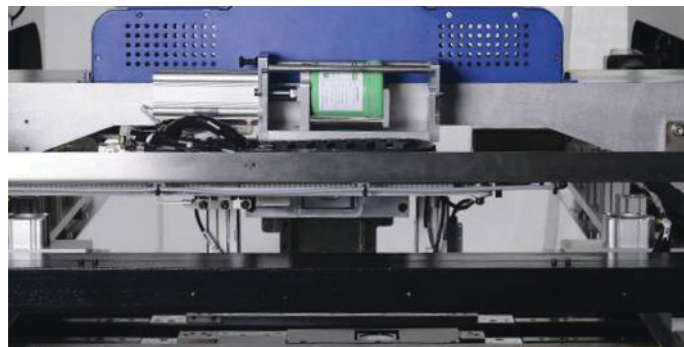
The paste is automatically dispensed across the entire squeegee length, maintained at a 15 mm rolling diameter, using a standard 500 g solder paste jar. This process completely eliminates solder paste wastage from overflowing at the sides of the squeegee.

OPC SQUEEGEE

The OPC (Optimum Paste Control) squeegee, with adjustable retainers on both sides, precisely retains solder paste within the PCB length. It delivers absolute control over the printing area, ensuring a clean sweep without stagnant paste at the stencil edges, resulting in higher paste quality and zero wastage.

PASTE ROLLING DIAMETER MONITORING SYSTEM

The system traces the solder paste rolling diameter in real time and automatically triggers dispensing when it falls below 10 mm. This completely eliminates insufficient solder paste on the stencil and maintains the paste rolling speed within the optimum range to achieve the best printing results.

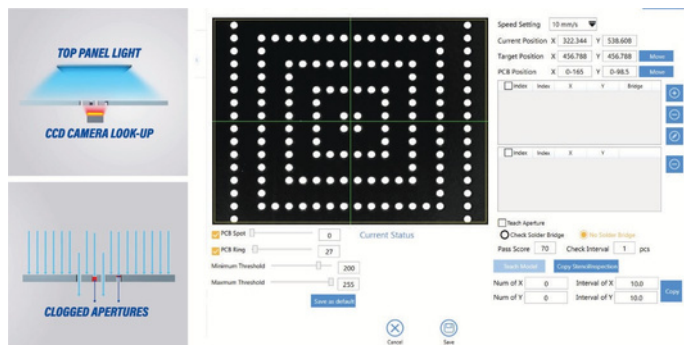


QPC QUALITY PRINT CONTROL

NOTHING IS MORE IMPORTANT THAN A GOOD PRINT

STENCIL APERTURE INSPECTION SYSTEM

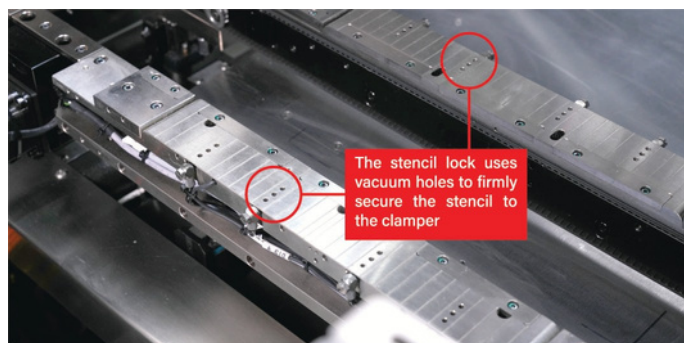
With a panel light installed on top and a CCD camera below, the system inspects stencil apertures and automatically detects clogging. This prevents poor-quality stencils from being used and ensures high printing quality right from the start.



GKG PATENTED PCB CLAMPER & STENCIL LOCK

The PCB clumper, patented and uniquely designed by GKG, combines a retractable top clamp with a motor-controlled side clamp. With these standard features, even today's most challenging substrates can be securely clamped to achieve the highest print quality.

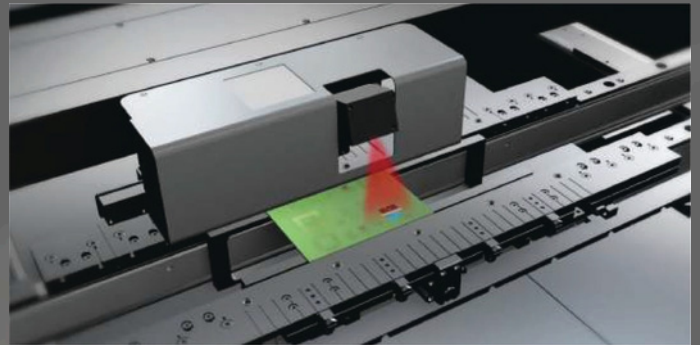
The stencil lock secures the stencil firmly on both sides of the conveyor during the printing cycle, eliminating stencil vibration by ensuring stable contact with the PCB.



INDUSTRY 4.0 READY

Machine status and parameters can be uploaded automatically. Designed to support customers in advancing towards Industry 4.0 intelligent production, G-Titan seamlessly connects with users' MES systems, enhancing product traceability and maintenance management.

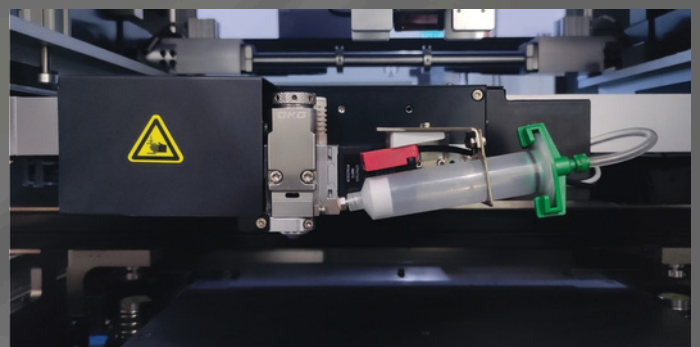
OPTIONAL



PNEUMATIC / PIEZOELECTRIC JETTING VALVE

Mounted on the CCD Camera XY axis, the non-contact type Jetting Valve is able to dispense (dots & lines) for chip bonder or corner bonding after paste printing, enhancing IC, BGA, or connector bonding strength.

OPTIONAL



BACK-TO-BACK CONFIGURATION

Two machines placed back-to-back are a perfect fit for all dual-lane SMT lines. Each machine can operate independently, allowing different product types to run simultaneously.

OPTIONAL



SPI CLOSED-LOOP CONNECTION

With the SPI closed-loop system, the machine automatically adjusts and corrects print deposits based on feedback related to print quality. This complete feedback system helps enhance print quality and improve production efficiency.

OPTIONAL



PERFORMANCE

Machine Positioning Capability	±10μm@6σ, Cpk≥2.0
Printing Process Capability	±17μm@6σ, Cmk≥2.0
Core Cycle Time (excluding printing & cleaning time)	< 8.5 secs
Product Changeover Time	< 3 mins
New Product Set-up Time	< 5 mins

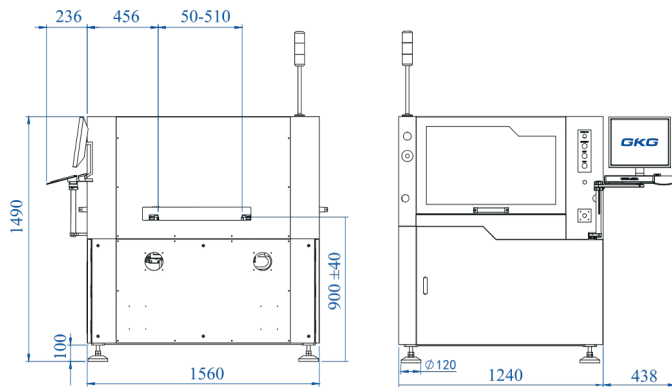
BOARD HANDLING

Max. Size (L x W)	510mm x 510mm
Min. Size (L x W)	50mm x 50mm
Thickness	0.4-6mm
PCB Thickness Adjustment	Automatic
PCB Max Weight	5kg
PCB Edge Clearance	3mm
PCB Bottom Clearance	23mm
PCB Warpage	Max. 1% diagonally
Clamping Method	Auto retractable top clamp, motor controlled side clamp
Support Method	Magnetic support pins, bars, blocks, vacuum suction
Conveyor Direction	L to R, R to L, R to R, L to L (software control)
Conveyor Height	900±40mm
Conveyor Speed (max.)	1,500mm/s
Conveyor Width Adjustment	Automatic

PRINTING PARAMETERS

Stencil Frame Size (L x W)	Adjustable, 470mm x 370mm to 737mm x 737mm
Print Gap (snap-off)	0-20mm
Printing Table Adjustment Range	X: ±10mm, Y: ±10mm Θ±2°
Print Speed	10-200mm/s
Squeegee Pressure	0.5-10kg (program control)
Squeegee Type	Std: OPC Squeegee (300mm & 450mm), Metal Squeegee Opt: Rubber
Squeegee Angle	Std: 60°, Option: 45°, 50°, 55°
Cleaning System	Auto wet, dry, vacuum (software select)

EXTERNAL DIMENSION [mm]



OPTICAL SYSTEM

Field-of-View (FOV)	10mm x 8mm
Fiducial Types	Circle, Triangle, Square, Diamond, Cross
Fiducial Size	0.5~4mm
Camera System	Digital CCD camera look up & down
2D Inspection	Max. 500 windows to inspect missing & insufficient (std.)

FACILITIES REQUIREMENT

Power Supply	AC220V±10%, 50/60Hz
Power Consumption	3kW
Air Supply	4-6Kgf/cm²
Air Consumption	5L/min
Dimension (excluding signal tower)	1,240mm (L) x 1,560mm (W) x 1,490mm (H)
Machine Weight	1,200kg

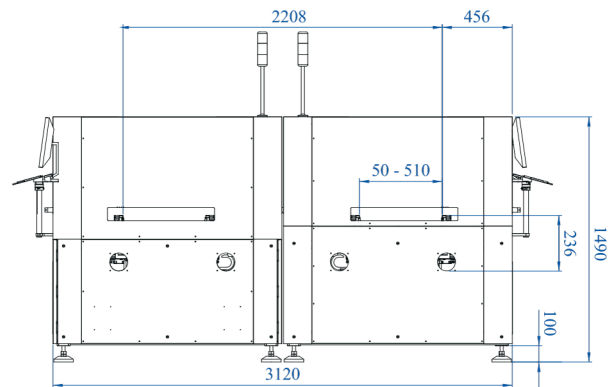
OPERATOR INTERFACE

Hardware	LCD Monitor, Mouse & Keyboard
Operating System (OS)	Windows 11
Control Method	Industrial PC controlled
I/O Interface	SMEA Standard

OPTIONS

Auto Glue/Solder Paste Jetting System (Pneumatic / Piezoelectric)
Handheld barcode scanner for stencil, solder paste, squeegee traceability
Internal/External Barcode/QR Code scanner for PCB traceability
Camera QR Code Scanner for PCB traceability
MES System Integration (for Ind. 4.0)
SPI Closed-loop
Squeegee Pressure Monitoring System
Uninterrupted Power Supply (UPS)
Paperless Cleaning System
2 machines in series for higher output
2 machines back-to-back for dual lane SMT line

BACK TO BACK EXTERNAL DIMENSION [mm]



P-SERIES

GKG



P-PRIMO

FULLY AUTOMATIC
LARGE PLATFORM
SMT PRINTER



PCB CLAMPER

The combination of retractable top clamp and motor controlled side clamp, uniquely designed by GKG (patented), securely clamps warped substrates to ensure highest quality of printing.

STD STANDARD FUNCTIONS

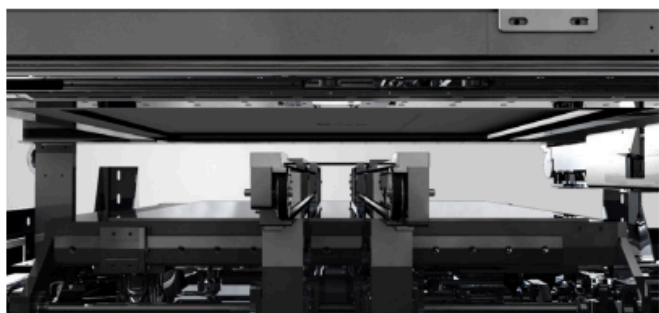
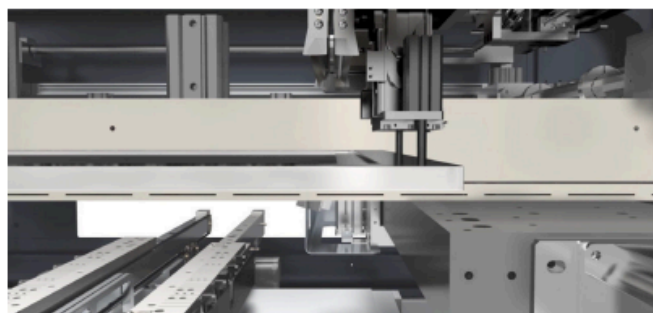


TABLE HEIGHT INSPECTION

The table height inspection function is supported by real-time software estimation, minimizing the gap between the stencil and the substrate, ensuring stability during the printing cycle to achieve the best quality printing results.



STENCIL Y-AXIS MEMORY

The stencil Y position is adjustable via user interface, and the settings can be saved and reapplied when replacing the stencil. This function significantly reduces human errors and saves time in readjusting stencil position.



DIGITAL CCD CAMERA

An upgraded CCD positioning camera with a 10x8mm field of view, effectively capturing different types of fiducial marks. It is upgradable with a QR code scanner to provide seamless connectivity with users' MES systems, enhancing product traceability and maintenance needs.

OPT OPTIONAL FEATURES



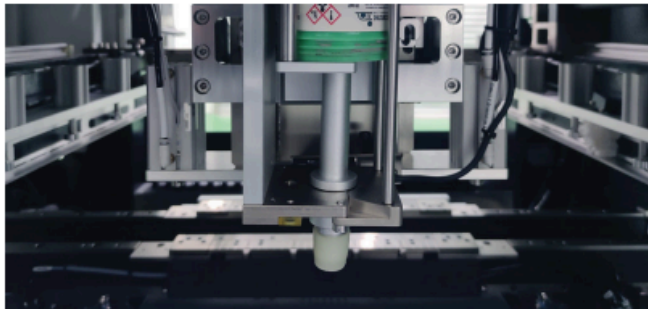
STENCIL LOCK

The stencil lock vacuum suction firmly holds the stencil on both sides of the conveyor during printing cycle, eliminating stencil vibration by having firm contact with the PCB.



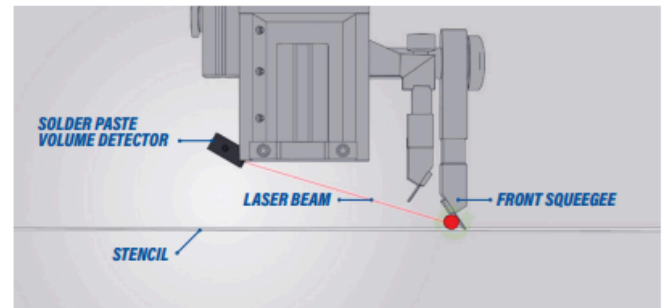
MES SYSTEM

Customization for Industry 4.0. MES keeps track of all manufacturing information in real time, receiving up-to-the-minute data from robots, machines and employees.



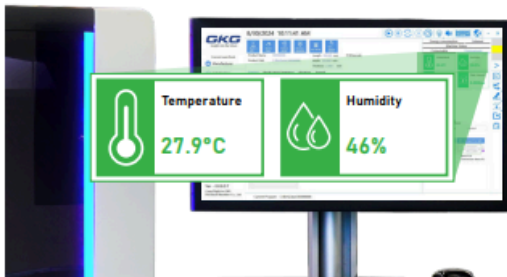
AUTO PASTE DISPENSING

Closed-loop with paste rolling diameter monitoring system to automatically replenish solder paste when insufficient paste is detected. The paste is automatically dispensed across the entire squeegee length, maintaining at 15mm rolling diameter, adopting the common 500 grams' solder paste jar.



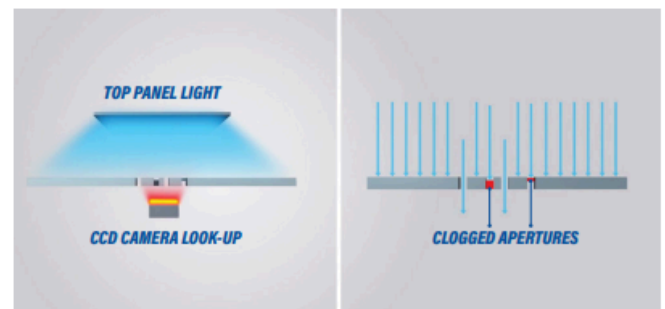
PASTE ROLLING DIAMETER MONITORING SYSTEM

Tracing solder paste rolling diameter in real time and trigger the auto dispensing if the paste diameter falls below 10mm. Completely eliminate insufficient solder paste on stencil and keep the paste rolling speed within optimum range to achieve best printing result.



TEMPERATURE & HUMIDITY CONTROL SYSTEM

The temperature and humidity monitoring and control system provides real-time monitoring and automatic regulation of the equipment's internal environment. The system helps improve solder paste lifespan and stability, ensuring consistent and high-quality printing performance.



STENCIL APERTURES INSPECTION SYSTEM

A panel light is installed at the top, with a CCD camera positioned below to inspect stencil apertures. It automatically detects any clogging of stencil apertures, eliminating the use of poor-quality stencils and ensuring quality printing right from the start.

PERFORMANCE

Machine Positioning Capability	$\pm 12.5\mu\text{m}@6\sigma$, $\text{Cpk} \geq 2.0$
Printing Process Capability	$\pm 25\mu\text{m}@6\sigma$, $\text{Cmk} \geq 2.0$
Core Cycle Time (excluding printing & cleaning time)	< 12 secs
Product Changeover Time	< 5 mins
New Product Set-up Time	< 8 mins

BOARD HANDLING

Max. Size (L x W)	850mm x 610mm
Min. Size (L x W)	100mm x 65mm
Thickness	0.4 ~ 8mm
PCB Thickness Adjustment	Automatic
PCB Max Weight	10kg
PCB Edge Clearance	3.5mm
PCB Bottom Clearance	23mm
PCB Warpage	Max. 1% diagonally
Clamping Method	Auto retractable top clamp, motor controlled side clamp
Support Method	Magnetic support pins, bars, blocks, vacuum suction
Conveyor Direction	L to R, R to L, R to R, L to L (software control)
Conveyor Height	900 $\pm$ 40mm
Conveyor Speed (max.)	1,500 mm/s
Conveyor Width Adjustment	Automatic

PRINTING PARAMETERS

Stencil Frame Size (L x W)	Adjustable, 650mm x 650mm to 1,100mm x 950mm
Print Gap (snap-off)	0 ~ 20mm
Printing Table Adjustment Range	X: $\pm 10\text{mm}$, Y: $\pm 10\text{mm}$ $\ominus \pm 2^\circ$
Print Speed	5 ~ 150mm/s
Squeegee Pressure	0.5 ~ 30kg (program control)
Squeegee Type	Std: Metal Squeegee 350mm, 520mm, 850mm Opt: Rubber Squeegee
Squeegee Angle	Std: 60°, Option: 45°, 50°, 55°
Cleaning System	Auto wet, dry, vacuum (software select)

OPTICAL SYSTEM

Field-of-View (FOV)	10mm x 8mm
Fiducial Types	Circle, Triangle, Square, Diamond, Cross
Fiducial Size	0.5 ~ 4.0mm
Vision Methodology	Digital CCD camera look up & down
2D Inspection	Max. 500 windows to inspect missing & insufficient (std.)

FACILITIES REQUIREMENT

Power Supply	AC220V $\pm 10\%$, 50 / 60Hz
Power Consumption	3kW
Air Supply	4 ~ 6Kgf / cm^2
Air Consumption	5L / min
Dimension (excluding signal tower)	1,590mm (L) x 1,608mm (W) x 1,530mm (H)
Machine Weight	1,400kg

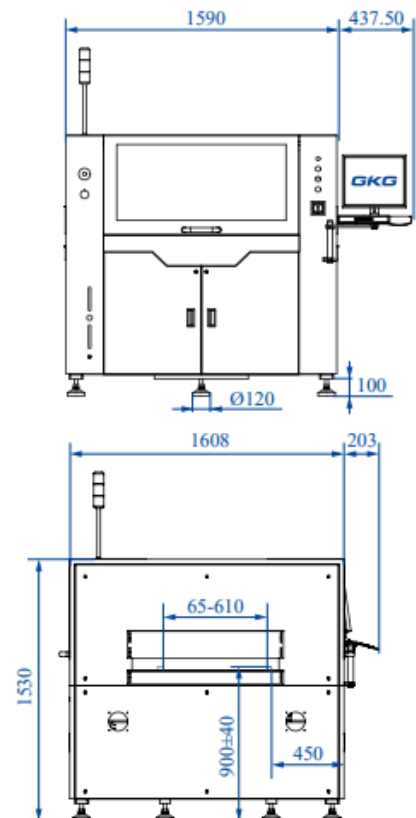
OPERATING INTERFACE

Hardware	LCD Monitor, Mouse & Keyboard
Operating System (OS)	Windows 11
Control Method	Industrial PC controlled
I/O Interface	SMEMA Standard

OPTIONAL FEATURES

Auto Paste Dispensing
Camera QR Code Scanner for PCB Traceability
Internal/External Barcode/QR Code scanner for PCB traceability
Handheld Barcode Scanner for stencil, solder paste, squeegee traceability
MES system integration (for Industry 4.0)
Paste Rolling Diameter Monitoring System
SPI closed-loop
Stencil Apertures Inspection System
Stencil lock
Squeegee Pressure Monitoring System
External Air-Condition Unit with Temperature & Humidity Display System
Uninterrupted Power Supply (UPS)

EXTERNAL DIMENSION [mm]





Solucinde

G-TERA

**HIGH-SPEED SMT
PRINTER**



LIGHTNING SPEED

Core Cycle Time : 5.2 secs

Actual Cycle Time : 12.5 secs (PCB Size 200mm x 154.5mm + 1 wipe)

With the latest motion control architecture, the speed of G-Tera is being cranked up by more than 30%



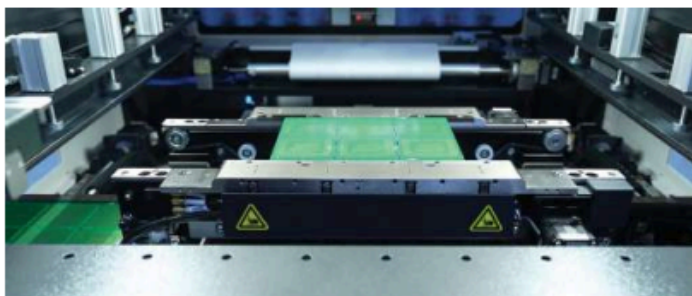
LINEAR MOTOR DRIVEN LIGHT-Bolt CAMERA

The upgraded linear motor driven **"LIGHT-Bolt" fiducial camera** (3.0 megapixel, FOV: 8 x 10mm) move and capture stencil and PCB marks concurrently at lightning speed. **"LIGHT-bolt"** camera can also scan the PCB on-the-fly to formulate complete PCB image to shorten the time for creating new printing programs and 2D paste inspection programs.



PCB IMAGE SCANNED BY LIGHT-Bolt CAMERA ON-THE-FLY

The conveyor **Single-stage or 3-stage mode** is automatically generated by programming. If PCB length is within 265mm, 3-stage mode will be adopted to cut down loading and unloading time to achieve core cycle time of just 5.2 secs. Optionally, with in/out rail stage extension of 135mm on both side, up to 400mm PCB length can adopt 3-stage mode. Single-stage mode can print PCB size up to 510mmx510mm.



SINGLE-STAGE / 3-STAGE MODE SWITCHABLE CONVEYOR SYSTEM



INDEPENDENT LINEAR MOTOR CLEANING SYSTEM

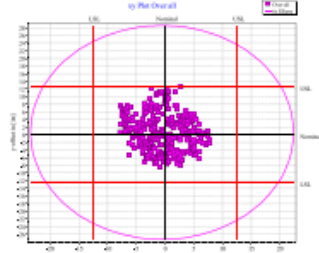
With the upgraded **Independent Linear Motor Driven Under Stencil Cleaning System** Actual cycle time to print a 200mm(L) x 154.5mm(W) PCB with squeegee travel speed set at 150mm/sec plus 1 complete wipe cycle is just 12.5 seconds. (Fastest in the industries)

UNMATCHED ACCURACY

$\pm 8 \mu\text{m}$ Total System Alignment Accuracy

$\pm 12.5 \mu\text{m}$ Wet Print Repeatability ≥ 2 Cpk @ 6 sigma

G-Tera has built-in ± 8 microns alignment, and ± 12.5 microns wet print repeatability ≥ 2 Cpk@6 sigma proven through CeTaQ 3rd party print capability analysis testing, using a dedicated glass plate fixture print with red glue.



2 Tester: Ganglin Li
Date: March 14, 2024

Serial No.: 004CY
Line: G-Tera

1 Summary

Over all				
Over all				
Board-to-Board Repeatability				
Characteristic	Specification	C_m	C_{mk}	Result
		Goal	Goal	
x-offset	$-12.5 \mu\text{m} \dots 12.5 \mu\text{m}$	2.00	2.00	PASSED
y-offset	$-12.5 \mu\text{m} \dots 12.5 \mu\text{m}$	2.53	2.40	PASSED
Number of Measurements		336		

Table 1: Capability Values Final State

This is almost 30% better in wet print accuracy over current best-in-class solder paste printer. With this top-notch accuracy and repeatability, G-Tera is still able to cater up to a maximum PCB size of 510mm x 510mm, making G-Tera the most flexible and adoptable printer for the electronic assembly industries.

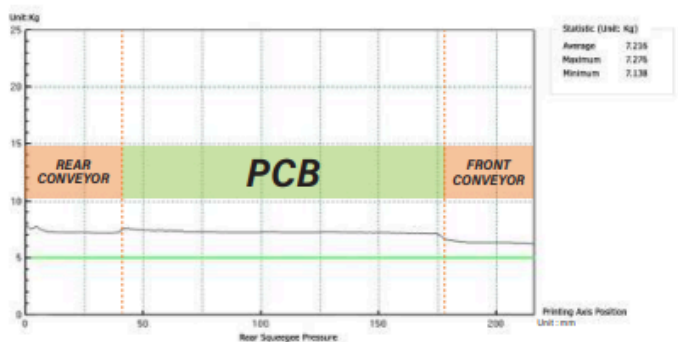
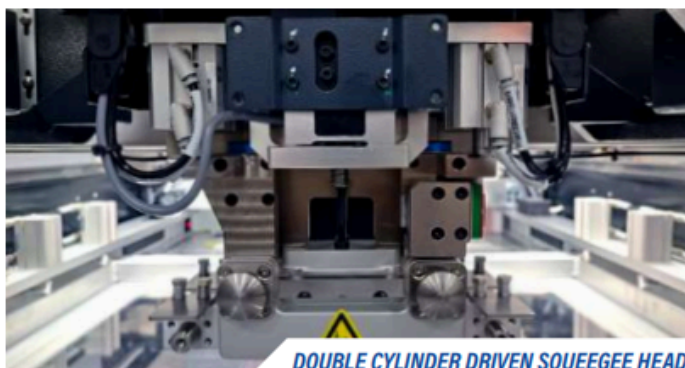
SOLID STABILITY

GKG printers are built to last for more than 25 years.

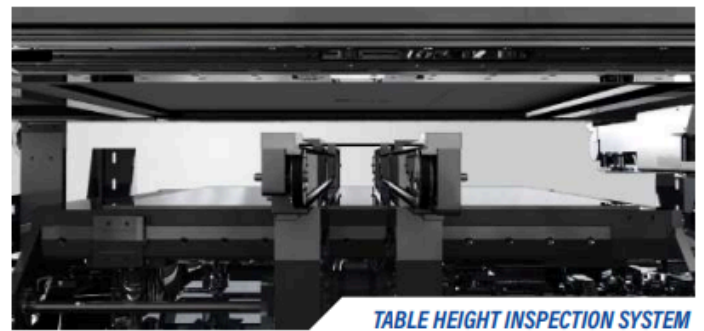
The rigid machine body structure with machine total net weight stands at about **1,250~1,300kg** can better counter all high speed movement and production floor vibration (Other manufacturer's printers are mostly around 600~800Kg in weight). This solid foundation greatly ensured long lasting stability without the need of periodical machine calibration by software.



The new **Advance Closed-loop Print Head** supported with double cylinder drive has the optimum release behavior that enhances the printing stability for large size PCB. It also comes with "Real Time Closed-loop Squeegee Pressure Control System" that can control the printing pressure within ± 0.5 kg.



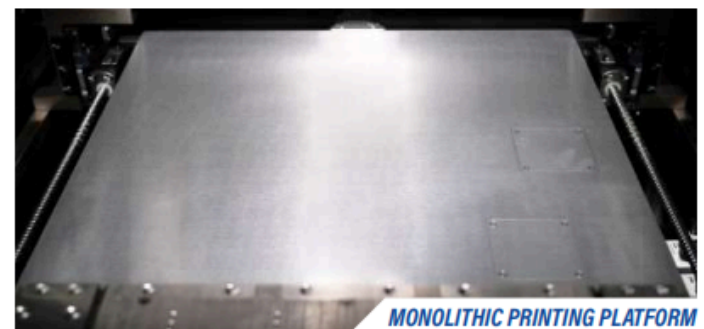
G-Tera comes with real time **Print Table Height (Z axis) Monitoring System**, which control the print table up/down accuracy within 15 μ m.



Stencil Lock uses vacuum hold-down mechanism to locked the stencil firmly by vacuum on both sides of the conveyor rail to achieve firm contact with PCB during printing to eliminate the stencil "waving" effect.



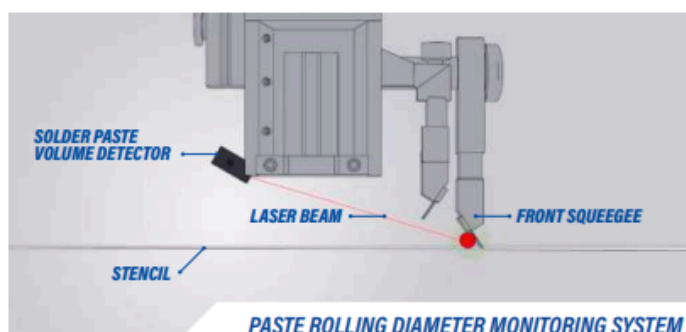
Engineered with a **Monolithic Printing Platform**, the G-Tera provides an ultra-stable, vibration-free foundation, further improving leveling accuracy from 50 μ m down to 20 μ m.



The built in **Real Time Current, Voltage, Vacuum Suction Monitoring Functions** minimise defects caused by power supply instability and improper under stencil cleaning due to the lack of maintenance.

VERSATILE CAPABILITY

Other standard features contribute to the capability of G-Tera are: **Paste Rolling Diameter Monitoring System** is for the real time monitoring of the paste rolling diameter within a controlled range of 10mm to 15mm, so as to maintain an optimum paste quantity on the stencil to maintain desire rolling speed at all time during printing for the best quality control.



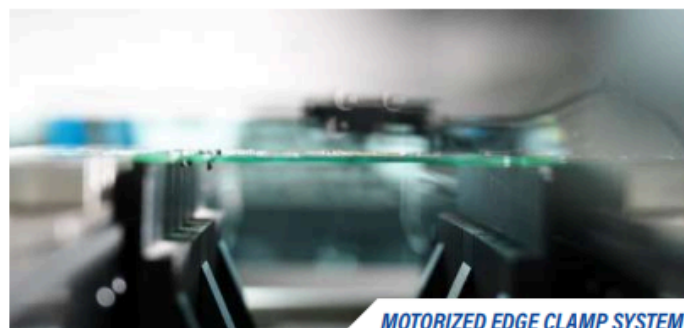
Optimum-Paste-Control (OPC) Squeegee with adjustable retainers on both side, the OPC squeegee can retain the solder paste within the exact length of each PCB model. The absolute control over desire printing area with clean sweep leaving no stagnant solder paste at both side of the stencil after printing which lead to better quality paste without wastage. 2 pairs of OPC squeegee (300mm and 450mm) are included as standard for G-Tera.



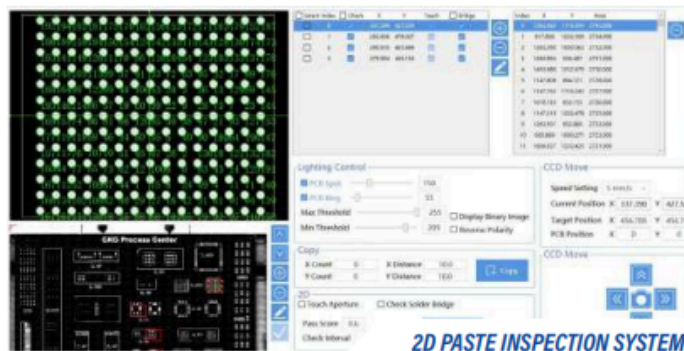
Special Paperless Self-Cleaning Under Stencil Cleaner combined with a secondary wet lint-free paper cleaner powered by strong venturi vacuum generator, greatly improve the cleaning results and drastically reduced the usage of IPA and lint free paper that could result in more than 24 hours of continuous operation without human intervention.



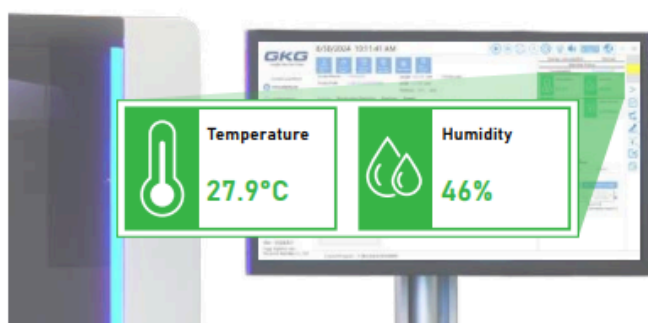
The **GKG Patented Clamping System** enables numerical control of the PCB clamping force to ensure a consistent edge-to-edge print without a top clamp, which typically creates a gap between the PCB and stencil that interferes with contact printing. For PCBs thinner than 0.6mm, retractable top clamps on both sides of the conveyor can slide out automatically and be used concurrently with the motorized auto-edge clamp; this is ideal for New Product Introduction (NPI) as it eliminates the need for dedicated vacuum blocks to be manufactured in advance.



2D paste inspection software for post printing solder paste coverage area inspection on critical components such as BGA, QFP.



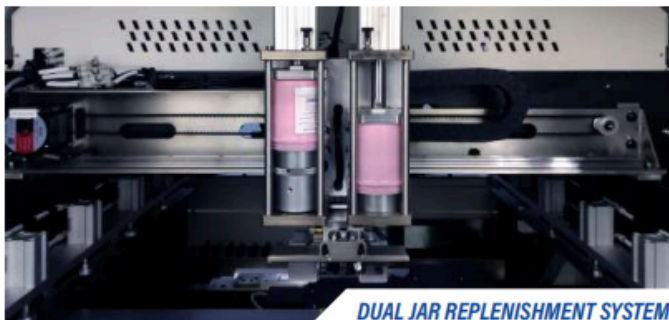
G-Tera also comes with **Temperature And Humidity Monitoring With Display; Cleaning Paper Roll Diameter Monitoring; IPA fluid level monitoring; Back to back (BTB) configuration** for dual lane SMT line as standard.



FUTURE-PROOF SOLUTION

Optional features are available to allow factory scaling towards the reality of "Lights-Out-Manufacturing" operation with full traceability conforming to industrial 4.0

The **Auto Paste Replenishment System (Field retrofittable)** can contain 2 cans of 500g solder paste jar to replenish solder paste automatically. It is closed-loop with paste rolling diameter monitoring system to top up the solder paste periodically when the rolling diameter drop below 10mm. This feature will allows more than 8 hours of continuous operation without human intervention.

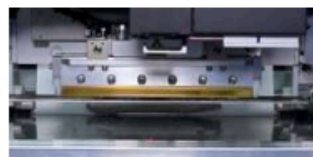


DUAL JAR REPLENISHMENT SYSTEM

AGV Assisted Auto Stencil Change System automatically change stencil trigger by command from the MES server. AGV will transport the new stencil to the rear side of the printer. Upon the completion of the auto paper roller retaining the remaining solder paste on the used stencil, the used stencil will be pushed into the AGV empty slot and replace with a new stencil automatically. Auto paper roller will then swiftly transfer the retained solder paste onto the new stencil to maintain the paste rolling diameter ready for the next production. GKG can also help to integrate this feature onto any existing AGV if customers already had one running at the production floor.



The AGV moves to G-Tera and replaces the used stencil.

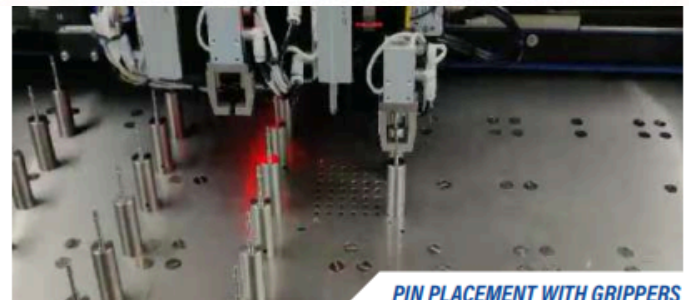


G-Tera starts retaining the solder paste after receiving a signal from the AGV.

MES Software Customization solution is supported by GKG software team to suit the specific interfacing protocol and requirement of the factory's IT communication standard.



The **Auto Support Pin Placement System** utilizes a dual-gripper mechanism to pick and place magnetic support pins. Capable of managing up to 60 pieces within a 420mm x 510mm area. This feature can not co-exist with auto dispensing jetting valve as the grippers are mounted on the same camera X-Y Axis.



PIN PLACEMENT WITH GRIPPERS

SPI Machine Closed-loop Software cater to machines handshake with all major Solder Paste Inspection machines available in the industry.



Other optional features available to further enhance the machine capability are as follow:

OTHER OPTIONAL FEATURES

Facial Recognition Authorization System based on facial recognition to provide machine access authority and ergonomically adjust the display height accordingly to each user's specific setting for their best comfort.



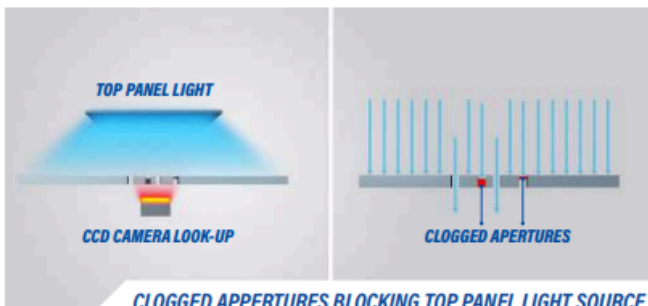
FACIAL RECOGNITION SYSTEM

Handheld Barcode Scanner for stencil, squeegee and solder paste verification prior to production.

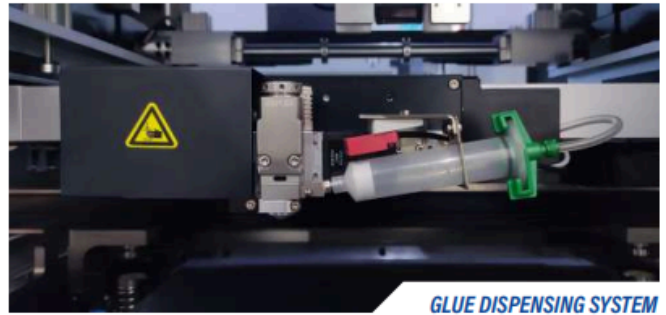


HAND-HELD BARCODE SCANNER

Stencil Apertures Inspection System with the illumination of the LED lights on top of the stencil, the LIGHT-bolt camera can be programmed to check the stencil apertures prior to production to eliminate bad or clog stencil right from the start or, to inspect those dedicated apertures anytime in between the production to determine the activation of under stencil cleaning cycle.

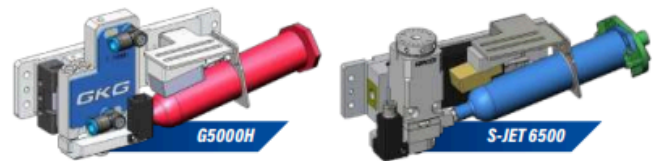


CLOGGED APPERTURES BLOCKING TOP PANEL LIGHT SOURCE



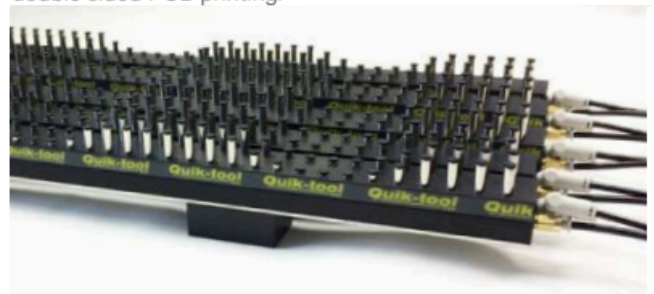
GLUE DISPENSING SYSTEM

S-Jet 6500 Pneumatic Jetting Valve a non-contact dispenser (dots & lines) that can jet chip bonder or corner bonder post paste printing to add bonding strength to IC, BGA or connectors.



G5000H Piezoelectric Jetting Valve for dispensing of solder paste by non-contact jetting method.

QUIK-TOOL (made in USA) pneumatically operated automatic modular support pin block can be integrated into G-Tera to eliminated manual pin set up for fastest set up especially for double sided PCB printing.



2 machine in series or 2 machine back-to-back cater to single lane or dual lane SMT line to increase productivity.

Camera Scan QR Code scan PCB code prior to printing to record parameters for PCB traceability.

Special 2 Steps Customized Metal Squeegee for miniature apertures printing such mini LED and micro LED (< 150 microns opening)

GKG has the largest printer manufacturing facility in Dongguan City of China, with monthly production capacity of more than 400 printers. For the past 21 years since 2003, we had gathered much knowledge and know how to make reliable and durable printers with the best price-performance ratio and the shortest delivery lead time to meet the high demand of the industry.

GKG Asia Pte Ltd Singapore, the global marketing and training centre since 2009, had in the recent years, established branch offices in Malaysia, Vietnam, India and Mexico, with spare parts support and training facilities to serve our distributors and customers better. We are committed to be the leader and your long term partner in this specialize field of solder paste printing technology.

PERFORMANCE

Machine Alignment Capability	±8μm@6 sigma, Cpk≥2.0
Process Alignment Capability	±12.5μm@6 sigma, Cmk≥2.0
Core Cycle Time (excluding printing & cleaning time)	5.2secs
Actual Cycle Time (including 1 printing & cleaning cycle)	12.5secs (PCB Size : 200 x 154.5mm, Squeegee speed @ 150mm/s)
Product Changeover Time	2mins
New Product Set-up Time	4mins

BOARD HANDLING

Max. Size (L x W)	Single-stage mode : 510mm x 510mm 3-stage mode: 265mm x 510mm (Optional : 400mm x 510mm)
Min. Size (L x W)	50mm x 50mm
Thickness	0.4mm~6mm
PCB Thickness Adjustment	Automatic Height Adjust Platform
PCB Max Weight	5kg
PCB Edge Clearance	2.5mm
PCB Bottom Clearance	20mm
PCB Warpage	Max. 1% diagonally
Clamping Method	Auto retractable top clamp, motor controlled side clamp
Support Method	Magnetic support pins, bars, dedicated vacuum block
Conveyor Belt	U-Shape Belt
Conveyor Direction	L to R, R to L, R to R, L to L (software control)
Conveyor Height	900±30mm
Conveyor Speed (max.)	1,500mm/s
Conveyor Width Adjustment	Automatic

PRINTING PARAMETERS

Stencil Frame Size (L x W)	Adjustable, 470mm x 370mm to 737mm x 737mm
Print Gap (snap-off)	0~20mm
Printing Table Adjustment Range	X: ±3mm, Y: ±7mm Θ: ±2°
Print Speed	10~200mm/s
Squeegee Pressure	0.5~20kg (program control)
Squeegee Type	Std: OPC Squeegee 300mm, 450mm Opt: Stainless Steel Metal Stepped Squeegee/ Rubber Squeegee
Squeegee Angle	Std: 60°, Option: 45°
Cleaning System	2 in 1 Paperless self cleaning dry & secondary wet lint-free paper with vacuum (software select)

OPTICAL SYSTEM

Camera System	3.0 Megapixel CCD digital camera look up & down concurrently
Field-of-View (FOV)	10mm x 8mm
Fiducial Types	Circle, Triangle, Square, Diamond, Cross
Fiducial Size	0.1mm~6mm
2D Inspection	Max. 500 windows to inspect missing & insufficient (std.)

FACILITIES REQUIREMENT

Power Supply	AC220V±10%, 50/60Hz
Power Consumption	3kW
Air Supply	4~6Kg/cm ²
Air Consumption	5L/min
Dimension (excluding signal tower)	1,258mm (L) x 1,560mm (W) x 1,520mm (H)
Machine Weight	1,250kg

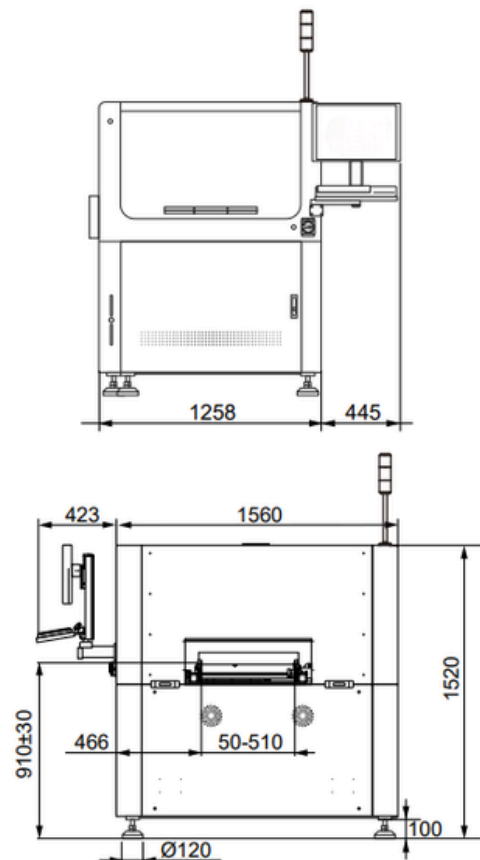
OPERATOR INTERFACE

Hardware	LED Monitor, Mouse & Keyboard
Operating System (OS)	Windows 11
Control Method	Industrial PC controlled
I/O Interface	SMEMA Standard

OPTIONS

Auto Paste Replenishment (Dual jars)
AGV Assisted Auto Stencil Change
AGV Automated Guided Vehicle
MES System Integration (for Ind. 4.0)
Auto Support Pins Placement
SPI closed-loop
Facial Recognition Authorization System
Handheld barcode scanner for stencil, solder paste, squeegee traceability
Stencil Aperture Inspection System
Auto Glue/Solder Paste Jetting System (Pneumatic / Piezoelectric)
Quik-tool Pneumatic Support Pin Block (Automatic)
2 machines in series for higher output
Camera Scan QR Code
External Aircon Unit
3-Stage Conveyor (Extension up to 400mm (L), with a 135mm extrusion on both sides of the machine)
PCB Dust Remover

EXTERNAL DIMENSION(mm)

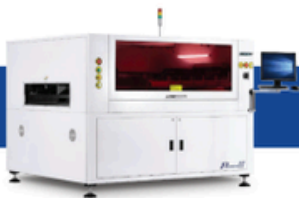


GKG

HIGH-PRECISION SOLUTION FOR ULTRA-LARGE PCB PRINTING



Pmax-II Print up to 1,200mm x 800mm



Fully-Automatic Large Board SMT Printer

CCD VISION CAMERA SYSTEM

The newly designed optical system features uniform ring illumination and high-intensity coaxial lighting with continuously adjustable brightness control. It enables accurate recognition of various types of fiducial marks, including uneven or textured marks, and is compatible with PCBs of different surface finishes and colors such as tin-plated, copper-plated, gold-plated, solder-sprayed, and FPC boards.

GKG's proprietary mathematical alignment algorithm ensures high-precision positioning, supporting 01005 printing capability.



INTEGRATED CLEANING SYSTEM

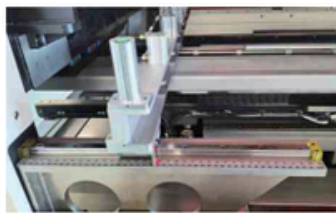
This system provides three cleaning modes: dry cleaning, wet cleaning, and vacuum cleaning. These modes can be used independently or in any combination. It enables fully automatic cleaning without operator intervention, achieving hands-free cleaning on the production line, thereby reducing cleaning time and improving manufacturing efficiency.

The new wiping system ensures full contact with the stencil, while the high-capacity vacuum system effectively removes residual solder paste from stencil apertures, achieving a truly efficient automatic cleaning performance.

The CCD inspection module operates independently from the cleaning mechanism. When the CCD is in use, it moves separately, reducing the load on the drive motor and enhancing the system's operating speed and positioning accuracy.



FLEXIBLE STENCIL FRAME CLAMPING SYSTEM



Easy stencil frame adjustment with a single knob operation.

Capable of accommodating various stencil frame sizes, enabling fast and efficient model changeover during production.

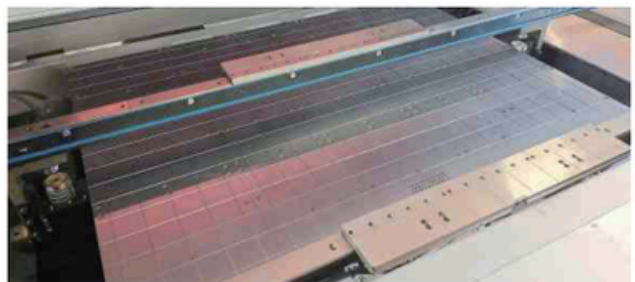
PRINTING HEAD STRUCTURE

Programmable Floating Self-Leveling Print Head with Stepper Motor Drive



GKG PRECISION ADJUSTABLE LIFT TABLE

The platform features a reliable structure and user-friendly adjustment mechanism, allowing for quick and precise height adjustment of the PCB pin supports to accommodate boards of varying thicknesses.



USER-FRIENDLY OPERATING INTERFACE

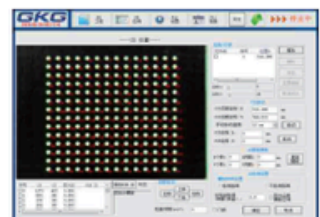
The system adopts a Windows-based operating interface with an intuitive and user-friendly HMI design. It features an efficient navigation structure for program file management, enabling operators to quickly become proficient in operation.

The menu includes functions such as operation logging, fault recording, automatic fault diagnosis, fault analysis prompts, and visual/acoustic alarms, ensuring simple, convenient, and efficient operation.



2D PASTE QUALITY INSPECTION & ANALYSIS SYSTEM

The system quickly detects printing defects such as solder paste misalignment, insufficient paste, and missing prints. Inspection data is automatically recorded and analyzed to ensure consistent and reliable print quality.



SPECIFICATIONS

Pmax-II

PERFORMANCE

Machine Positioning capability	±12.5um@6σ, Cpk≥2.0
Printing Process capability	±25um@6σ, Cmk≥2.0
Core Cycle Time	<12 secs (Excluding printing & cleaning)
Product Changeover time	4mins
New Product Setup Time	6mins

BOARD HANDLING

Maximum Size (L x W)	1200mm x 800mm
Minimum Size (L x W)	100mm x 65mm
PCB Thickness	0.4mm to 10mm
PCB Thickness Adjustment	Auto leveling
PCB Support Methods	Magnetic pins, support blocks, auto table adjustment
PCB Clamping Methods	Retractable top clamp & motor controlled side clamp
PCB Max. Weight	10kg
PCB Edge Clearance	3.5mm
PCB Bottom Clearance	23mm
PCB Warpage	Max. 1% diagonally
Conveyor Direction	L > R, R > L, R > R, L > L (Software controlled)
Conveyor Height	900±40 mm
Conveyor Speed	Max. 1500mm/sec
Conveyor Width Adjustment	Automatic

PRINTING PARAMETERS

Stencil Frame Size (L x W)	Adjustable, 737mm x 737mm to 1500mm x 1250mm
Print Head	Arc shape beam with 2 independent double linear guide motorized heads
Print Mode	Single or Dual Squeegee Printing (Software select)
Printing Table Adjustment Range	X: ±20mm; Y: ±20mm; Θ: ±2°
Squeegee Type	Metal: 850mm, 1,250mm (Std.) Other sizes opt.
Squeegee Pressure	0.5 - 30kg (Programmable)
Squeegee Speed	10 - 150mm/sec
Squeegee Angle	Std. 60°, Option 45°, 50°, 55°
Cleaning System	Auto wet / dry / vacuum combination (Programmable)

OPTICAL SYSTEM

Vision Method	Single camera simultaneously Look Up/Look Down
Field of View (FOV)	10mm x 8mm
Fiducial Type	Circle, triangle, square, diamond, cross
Fiducial Size	0.1~6mm
20 Inspection	500 windows to inspect missing, insufficient (Std.)

OPERATOR INTERFACE

Hardware	LCD Monitor, Mouse & keyboard
Operating System (OS)	Windows 11
Control Method	Industrial PC controlled
I/O Interface	SMEMA Standard

FACILITIES REQUIREMENT

Power Supply	AC220V±10%, 50/60Hz, single phase
Air Supply	2.4 ~ 6kgf/cm
Power Consumption	3KW
Dimension (Exclude Tower Light)	2,020(L) x 1,740(W) x 1,524(H)mm
Machine Weight	Approximately 1,800kg

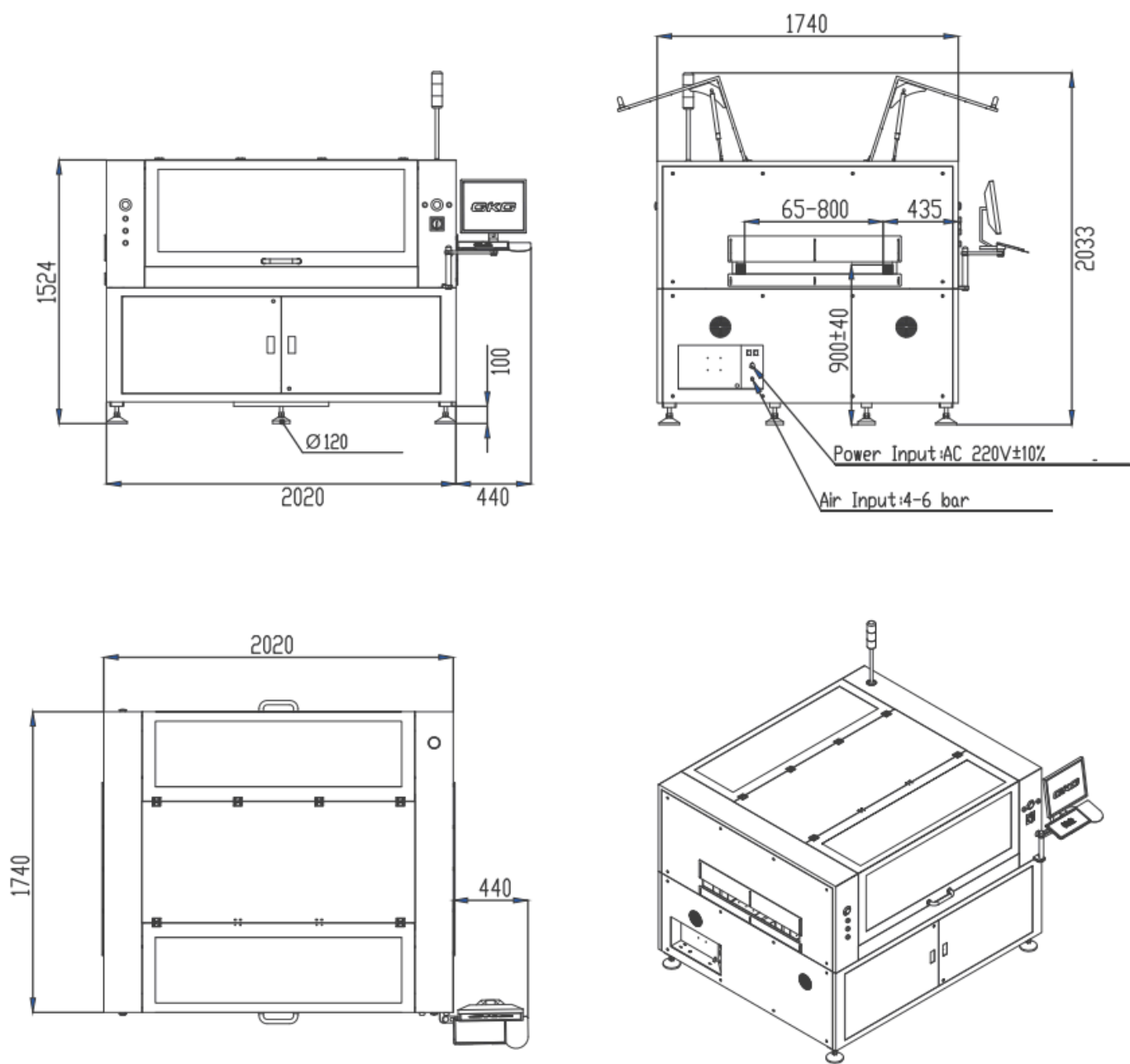
OPTIONAL FEATURES

- Auto Paste Replenishment System
- Paste Rolling Diameter Monitoring System
- External Air-Conditional Unit
- Temperature Control & Humidity Display System
- Hand-held Barcode Scanner for stencil, solder paste, squeegee traceability
- Internal / External barcode scanner for PCB traceability
- Camera QR Code Scanner for Traceability
- MES System Integration (for Ind. 4.0)
- Uninterrupted Power Supply (UPS)

Disclaimer:

The information in this manual provides general descriptions and performance characteristics, which may differ from the actual product or be subject to change as technology advances. Specific performance features and functions are binding only when confirmed through an official agreement.

EXTERNAL DIMENSION(mm)



CONTACT



VENTAS@SOLUCINDE.COM

**IF YOU WOULD LIKE
A QUOTE, PLEASE
CONTACT US BY
SCANNING OUR
WHATSAPP QR CODE**



**WANT TO LEARN
MORE ABOUT OUR
SOLUTIONS? VISIT
OUR WEBSITE.**



LOCATION MÉXICO

**Zacatecas 503A, Huastecas de
Lampacitos, 88780 Reynosa, Tamaulipas**

LOCATION USA

**1124 N International blvd suite 650, Hidalgo
Texas 78557**



Solucinde